

BIPOLAR ELECTROSURGICAL CLAMP FOR REMOVING & MODIFYING TISSUE

ABSTRACT OF THE DISCLOSURE

The present invention provides systems, apparatus and methods for selectively applying electrical energy to body tissue in order to ablate, contract, coagulate, or otherwise modify a target tissue or organ of a patients. An electrosurgical apparatus of the invention includes a shaft having a shaft distal end bearing an active electrode and a return electrode. At least one of the active electrode and the return electrode is moveable such that the shaft distal end can adopt a closed configuration or an open configuration. The apparatus can operate in an ablation mode or a sub-ablation mode. The closed configuration is adapted for clamping and coagulating a target tissue while the apparatus is operating in the sub-ablation mode, while the open configuration is adapted for ablating the target tissue via molecular dissociation of tissue components. A method of the present invention comprises clamping a target tissue or organ with an electrosurgical probe. A first high frequency voltage is applied between the active electrode and the return electrode to effect coagulation of the clamped tissue. Thereafter, a second high frequency voltage is applied to effect localized molecular dissociation of the coagulated tissue. The present invention allows the ablation or modification of the target tissue with minimal or no damage to surrounding, non-target tissue.